**Gene Regulation:**Directions fill in the blank

**Prokaryotic Gene Regulation:**

To (1) \_\_\_\_\_\_\_\_\_\_\_\_ energy and resources, prokaryotes regulate their activities, using only those genes necessary to function.  
  
DNA-binding proteins in prokaryotes regulate genes by controlling (2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_.  
  
A (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a group of genes that are regulated together.  
  
(4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a compound made up f two simple sugars, galactose, and glucose.  
  
To use lactose for food, the  (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ must transport lactose across it’s cell membrane and then break the bond between (6) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
Remarkably, the bacterium almost seems to (8) “\_\_\_\_\_\_\_\_\_\_\_” when the products of these genes are needed.  When lactose is not present, the lac genes are turned off for proteins that bend to DNA and(9) \_\_\_\_\_\_\_\_\_\_ transcription.  
  
(10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a short DNA region, adjacent to the promoter of a prokaryotic operon, that binds repressor proteins responsible for controlling the rate of transcription.  
  
When lactose is added to the medium, it diffuses into the cell and (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the lac repressor.  
  
**Eukaryotic Gene Regulation**

Gene expression in eukaryotic cells can be regulated at a number of levels. One of the most critical is the level of  (12)\_\_\_\_\_\_\_\_\_\_\_\_  
  
Gene regulation in eukaryotes is (13)\_\_\_\_\_\_\_\_\_ complex than in prokaryotes.  
  
Complex gene regulation in eukaryotes is what makes (14)\_\_\_\_\_\_\_\_\_\_\_ possible.  
  
After the two strands of the miRNA loop separate, one of the pieces attaches to a cluster of proteins to form what is known as a (15) \_\_\_\_\_\_\_\_\_\_\_ complex  
  
Blocking gene expression by means of an miRNA silencing complex is know as  
(16) \_\_\_\_\_ interference

**Genetic Control of Development**

(17)\_\_\_\_\_\_\_\_\_\_\_\_\_ is becoming specialized in structure and function

(18)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ regulates organs that develop in specific body parts

(19)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ code for transcription factors that activate other genes that are important in cell development and differentiation

(20)\_\_\_\_\_\_\_\_\_\_\_ a group of homebox genes  
  
regulating gene expression is (21)\_\_\_\_\_\_\_\_\_\_\_\_ important in shaping the way a multicultural organism